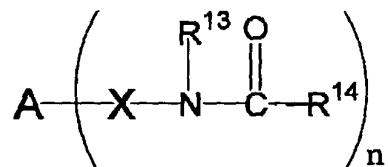
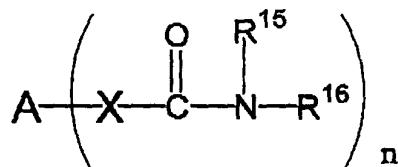


**What is claimed is:**

1. A chemical amplification type positive resist composition comprising a nitrogen containing compound of the formula (VIa) or (VIb);



5 (VIIa)

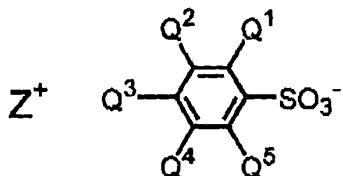


(Vib)

wherein A represents a alicyclic hydrocarbon group optionally substituted, X represents alkylene having 1 to 4 carbon atoms or a single bond, R<sup>13</sup>, R<sup>15</sup> and R<sup>16</sup> each independently represent hydrogen, alkyl having 1 to 12 carbon atoms, cycloalkyl having 3 to 12 carbon atoms, haloalkyl having 1 to 12 carbon atoms, 10 alkyl having 2 to 12 carbon atoms in which at least one -CH<sub>2</sub>- other than that binding to the adjacent group is substituted by -S- or -O-, alkoxy having 1 to 12 carbon atoms, or aromatic group optionally substituted, R<sup>14</sup> represents hydrogen, alkyl having 1 to 12 carbon atoms, cycloalkyl having 3 to 12 carbon atoms, haloalkyl having 1 to 12 carbon atoms, alkyl having 2 to 12 carbon atoms in 15 which at least one -CH<sub>2</sub>- other than that binding to the adjacent group is substituted by -S- or -O-, alkoxy having 1 to 12 carbon atoms, aromatic hydrocarbon group optionally substituted, or arylamino optionally substituted, and n denote integer of 1 to 5, with the proviso that when n is 2 or more, each of -X-NR<sup>13</sup>-CO-R<sup>14</sup> in the formula (VIa) or each of -X-CO-NR<sup>15</sup>R<sup>16</sup> in the formula 20 (VIb) may be different,

resin which contains a structural unit having an acid labile group and which itself

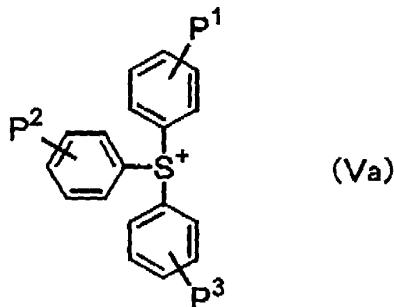
is insoluble or poorly soluble in an alkali aqueous solution but becomes soluble in an alkali aqueous solution by the action of an acid; and an acid generator of the formula (I)



( I )

- 5 wherein  $\text{Q}^1$ ,  $\text{Q}^2$ ,  $\text{Q}^3$ ,  $\text{Q}^4$  and  $\text{Q}^5$  each independently represent hydrogen, hydroxyl, alkyl having 1 to 12 carbon atoms, alkoxy having 1 to 12 carbon atoms or electron-withdrawing group, and  $\text{Z}^+$  represents a group of the formula (Va), (Vb) or (Vc).

A group of the formula (Va)

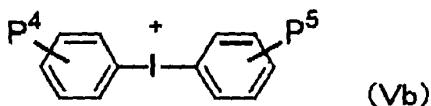


(Va)

10

- wherein  $\text{P}^1$ ,  $\text{P}^2$  and  $\text{P}^3$  each independently represent hydrogen, hydroxyl, alkyl having 1 to 6 carbon atoms or alkoxy having 1 to 6 carbon atoms.

A group of the formula (Vb)



(Vb)

- 15 wherein  $\text{P}^4$  and  $\text{P}^5$  each independently represent hydrogen, hydroxyl, alkyl having 1 to 6 carbon atoms or alkoxy having 1 to 6 carbon atoms.

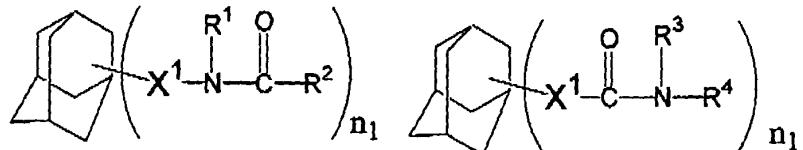
A group of the formula (Vc)



wherein P<sup>6</sup> and P<sup>7</sup> each independently represent alkyl having 1 to 6 carbon atoms or cycloalkyl having 3 to 10 carbon atoms, or P<sup>6</sup> and P<sup>7</sup> bond to form divalent acyclic hydrocarbon having 3 to 7 carbon atoms which form a ring together with the adjacent S<sup>+</sup>, and at least one -CH<sub>2</sub>- in the divalent acyclic hydrocarbon may be substituted by -CO-, -O- or -S-; P<sup>8</sup> represents hydrogen, P<sup>9</sup> represents alkyl having 1 to 6 carbon atoms, cycloalkyl having 3 to 10 carbon atoms or aromatic group optionally substituted, or P<sup>8</sup> and P<sup>9</sup> bond to form 2-oxocycloalkyl together with the adjacent -CHCO-.

2. The composition according to Claim 1, wherein the content of the nitrogen containing compound of the formula (VIa) or (VIb), the content of the resin, and the content of the acid generator are 0.01 to 1 % by weight, 80 to 99.89 % by weight and 0.1 to 19.99 % by weight respectively, based on the total solid content of the composition.

3. The composition according to Claim 1, wherein the nitrogen containing compound is a compound of the formula (IIa) or (IIb)



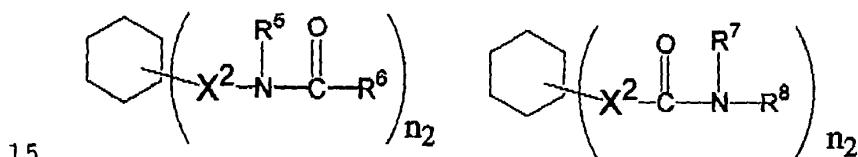
wherein X<sup>1</sup> represents alkylene having 1 to 4 carbon atoms or a single bond, R<sup>1</sup>, R<sup>3</sup> and R<sup>4</sup> each independently represent hydrogen, alkyl having 1 to 12 carbon

atoms, cycloalkyl having 3 to 12 carbon atoms , haloalkyl having 1 to 12 carbon atoms, alkyl having 2 to 12 carbon atoms in which at least one -CH<sub>2</sub>- other than that binding to the adjacent group is substituted by -S- or -O-, alkoxy having 1 to 12 carbon atoms, or aromatic hydrocarbon group optionally substituted, R<sup>2</sup>

5      represents hydrogen, alkyl having 1 to 12 carbon atoms, cycloalkyl having 3 to 12 carbon atoms , haloalkyl having 1 to 12 carbon atoms, alkyl having 2 to 12 carbon atoms in which at least one -CH<sub>2</sub>- other than that binding to the adjacent group is substituted by -S- or -O-, alkoxy having 1 to 12 carbon atoms, aromatic hydrocarbon group optionally substituted, or arylamino optionally substituted,

10     and n<sub>1</sub> denotes integer of 1 to 5, with the proviso that when n<sub>1</sub> is 2 or more, each of -X<sup>1</sup>-NR<sup>1</sup>-CO-R<sup>2</sup> in the formula (IIa) or each of -X<sup>1</sup>-CO-NR<sup>3</sup>R<sup>4</sup> in the formula (IIb) may be different.

4. The composition according to Claim 1, wherein the nitrogen containing compound is a compound of the formula (IIIa) or (IIIb)



wherein X<sup>2</sup> represents alkylene having 1 to 4 carbon atoms or a single bond, R<sup>5</sup>, R<sup>7</sup> and R<sup>8</sup> each independently represent hydrogen, alkyl having 1 to 12 carbon atoms, cycloalkyl having 3 to 12 carbon atoms , haloalkyl having 1 to 12 carbon atoms, alkyl having 2 to 12 carbon atoms in which at least one -CH<sub>2</sub>- other than that binding to the adjacent group is substituted by -S- or -O-, alkoxy having 1 to 12 carbon atoms, or aromatic hydrocarbon group optionally substituted, R<sup>6</sup>

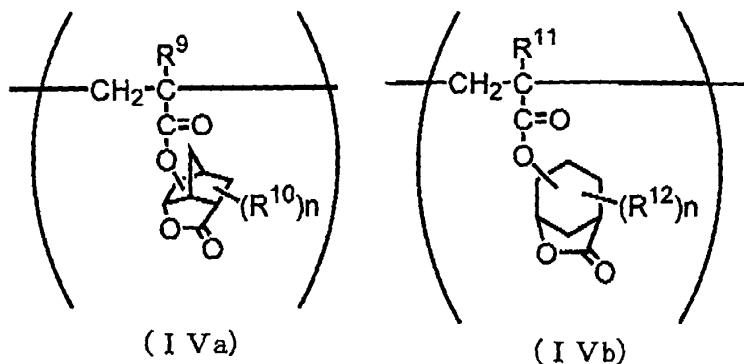
20     represent hydrogen, alkyl having 1 to 12 carbon atoms, cycloalkyl having 3 to 12

carbon atoms , haloalkyl having 1 to 12 carbon atoms, alkyl having 2 to 12 carbon atoms in which at least one -CH<sub>2</sub>- other than that binding to the adjacent group is substituted by -S- or -O-, alkoxy having 1 to 12 carbon atoms, aromatic hydrocarbon group optionally substituted, or arylamino optionally substituted,  
5 and n<sub>2</sub> denotes integer of 1 to 5, with the proviso that when n<sub>2</sub> is 2 or more, each of -X<sup>2</sup>-NR<sup>5</sup>-CO-R<sup>6</sup> in the formula (IIIa) or each of -X<sup>2</sup>-CO-NR<sup>7</sup>R<sup>8</sup> in the formula (IIIb) may be different.

5. The composition according to Claim 1, wherein the content of the structural unit having an acid labile group is 10 to 80 % by weight in the total  
10 structural units of the resin.

6. The composition according to Claim 1, wherein the structural unit having an acid-labile group is a structural unit derived from 2-alkyl-2-adamantyl (meth)acrylate or 1-(1-adamantyl)-1-alkylalkyl (meth)acrylate.

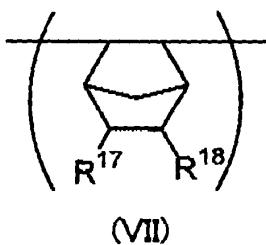
7. The composition according to Claim 1, wherein the resin contains, in  
15 addition to the structural unit having the acid-labile group, further at least one structural unit selected from the group consisting of a structural unit derived from 3-hydroxy-1-adamantyl (meth)acrylate, a structural unit derived from 3,5-dihydroxy-1-adamantyl (meth)acrylate, a structural unit derived from (meth)acryloyloxy-  $\gamma$  -butyrolactone having a lactone ring optionally substituted  
20 by alkyl, a structural unit of the formula (IVa) and a structural unit of the following formula (IVb)



wherein R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup> and R<sup>12</sup> each independently represent hydrogen or methyl, and n represents an integer of 1 to 3, with the proviso that when n is more than 1, each of the plurality of R<sup>10</sup> or R<sup>12</sup> may be different.

5 8. The composition according to Claim 1, wherein the resin further  
contains a structural unit derived from 2-norbornene and a structural unit derived  
from an aliphatic unsaturated dicarboxylic anhydride.

9. The composition according to Claim 8, wherein the structural unit derived from 2-norbornene is a structural unit of the formula (VII):



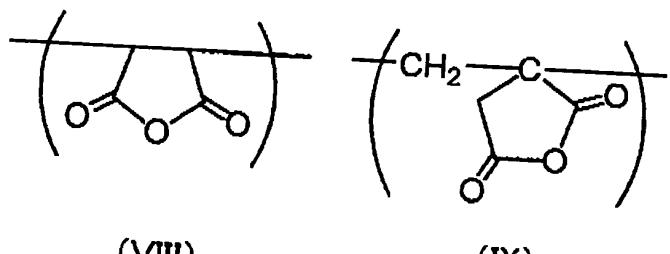
10

(VII)

wherein R<sup>17</sup> and R<sup>18</sup> each independently represent hydrogen, alkyl having 1 to 3 carbon atoms, hydroxyalkyl having 1 to 3 carbon atoms, carboxyl, cyano or -COOZ group in which Z represents alcohol residue, or R<sup>17</sup> and R<sup>18</sup> bond together to form a carboxylic anhydride residue represented by -C(=O)OC(=O)-,

15 and

the structural unit derived from the aliphatic unsaturated dicarboxylic anhydride is at least one structural unit selected from the group consisting of the formulae (VIII) and (IX).



(VIII)

(IX)

5

10. The composition according to Claim 1, which further comprises a surfactant.